CLAIMS:

1. A method of determination of at least one optical parameter of an optical signal, comprising the steps of:

- manipulating a beam of the optical signal, the manipulation having polarization properties, the properties being dependent of the position in the beam laterally with respect to a direction of propagation of the beam during manipulation, wherein the beam is manipulated by:

    - retarding the beam, the retardation being dependent of the position in the beam laterally with respect to a direction of propagation of the beam during retardation, and

    - polarizing the beam using a known polarization;

- detecting intensities in at least three parts of the beam in their dependency of the position in the beam laterally with respect to a direction of propagation of the beam during detection, and

- evaluating the optical parameter on the basis of the detected intensities.

2. The method of claim 1, wherein the manipulation comprises the manipulation of the power transmission of at least a part of the beam, the manipulation of the power transmission being dependent of the position in the beam laterally with respect to a direction of propagation of the beam during manipulation of the power transmission, and being dependent of the polarization of said part of the beam(8, 104, 106, 108, 202, 206, 208, 210).

3. The method of claim 1, further comprising the steps of:

- providing the beam with a known wavelength, and
- evaluating as an optical parameter the state of polarization of the signal.

4. The method of claim 1, further comprising the steps of:

- providing the beam with a known state of polarization,
- evaluating as an optical parameter the wavelength of the signal.

5. The method of claim 1, further comprising the steps of:

- splitting the beam in a first and at least a second beam,
- providing the first beam with a known first polarization before manipulating,
- providing the second beam with a known second polarization before manipulating,
- detecting the intensity of the first beam in its dependence on the position in the first beam laterally with respect to a direction of propagation of the first beam during detection,
- detecting the intensity of the second beam in its dependence on the position in the second beam laterally with respect to a direction of propagation of the second beam during detection,
- evaluating as an optical parameter the wavelength of the beam.

6. The method of claim 1, further comprising the steps of evaluating the optical parameter by:

- describing the effect of the manipulation step with the help of a matrix,
- inverting the matrix,
- multiplying the detected intensities with the inverted matrix to get the Stokes parameters for the optical signal.

7. The method of claim 1, wherein the dependence of the properties of the manipulation from the position in the beam being sufficient to make the matrix invertible.

8. The method of claim 1, wherein the detection being a detection of four different parts of the beam.

9. The method of claim 1, further comprising the steps of:

- splitting the beam in a first, a second and a third beam,
- providing the first beam with a known first polarization before manipulation,
- providing the second beam with a known second polarization before manipulation,
- detecting the intensity of the first beam in its dependence on the position in the first beam laterally with respect to a direction of propagation of the first beam during detection,
- detecting the intensity of the second beam in its dependence on the position in the beam laterally with respect to a direction of propagation of the second beam during detection,

- detecting the intensity of the third beam in its dependence on the position in the beam laterally with respect to a direction of propagation of the third beam during detection,

- evaluating as an optical parameter the wavelength of the beam on the basis of the detected intensities of the first and the second beam,

- evaluating as an optical parameter the state of polarization of the beam on the basis of the detected intensity of the third beam.

10. A software program or product, preferably stored on a data carrier, for executing the method of claim 1, when run on a data processing system such as a computer.

11. An apparatus for determination of at least one optical parameter of an optical signal, comprising:

- an element in a path of a beam of the optical signal for manipulating the beam, the manipulation having polarization properties, the properties being dependent on the position in the beam laterally with respect to a direction of propagation of the beam during the manipulation,

- a detector element in the path for detecting the intensities in at least three parts of the beam in their dependency on the position in the beam laterally with respect to a direction of propagation of the beam during detection, and

- an evaluating unit connected to the detector element for evaluating the optical parameter on the basis of the detected intensities,

wherein the element further comprises:

- at least one retardation element in the path, the retardation of the retardation element being a function of the position in the beam laterally with respect to a direction of propagation of the beam during retardation, and
- at least one polarization element in the path with a known polarization effect on the signal.

12. The apparatus of claim 11, wherein the retardation element comprises at least two retardation plates in the path, the retardation being a linear function of the position in the beam.

13. The apparatus of claim 11, wherein at least one of the retardation plates has non-parallel surfaces.

14. The apparatus of claim 11, wherein the retardation plates are positioned in the path such that their axes of the extraordinary index of refraction have some angle with respect to each other.

15. The apparatus of claim 11, further comprising:

- a first beam splitter in the path between the light source and the element for providing a first beam traveling a first path and a second beam traveling a second path,
- a first polarization element in the first path for providing the first beam with a known polarization,
- a second polarization element in the second path for providing the second beam with a known second polarization,

- the detector element being in the path of the first and of the second polarized beam for detecting the intensity of the beam in its dependency of the position in the beams laterally with respect to a direction of propagation of the beams during detection.

16. The apparatus of claim 11, further comprising:

- a first and a second beam splitter in the path between the light source and the element for splitting the beam in a first beam traveling a first path, a second beam traveling a second path and a third beam traveling a third path,

- a first polarization element in the first path for providing the first beam with a known first polarization,

- a second polarization element in the second path for providing the second beam with a known second polarization,

- the detector element being in the paths of the first, the second and the third beam for detecting the intensities of the beams in their dependency of the position in the respective beam laterally with respect to a direction of propagation of the respective beam during detection,

- the evaluating unit being able for evaluating as an optical parameter the wavelength of the beam on the basis of the detected intensities of the first and the second beam and being able to evaluate the state of polarization of the beam on the basis of the detected intensities of the third beam.

17. An element for manipulating an optical signal, comprising at least two sub-elements, each having at least one body axis, each of these sub-

elements having a variation in a manipulation property along its axis and these axes have some angle with respect to each other.

18. The element of claim 17, wherein the manipulation property of the sub-elements comprises a polarization manipulation property for manipulating the state of polarization of at least a part of the optical signal.

19. The element of claims 17, wherein the sub-elements comprises retardation sub-elements for retardation of the optical signal.

20. The element of claim 17, wherein the sub-elements have the shape of a wedge.

21. The apparatus of 11, wherein the element comprises an element according to claim 17.